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# Understanding Evaluations of Environmental Education Programs

One of the values of conducting a sound evaluation of an EE program is that others can benefit from what was learned through the evaluation. Experiences from other programs can inform a program manager of successful strategies employed, ways to improve a program, and tools for measuring the program efforts. An individual does not have to be expert in assessment or measurement to be able to benefit from other program evaluations. There are several basic points of reference the reader needs to hold in mind as they review the evaluation of another program.

## Goals of the Program

A good evaluation does not tell the reader how "wonderful" a program was. Rather, it compares the stated goals of the program to the outcomes and tells us to what level the program met these goals. In a well done evaluation report, the goals are explicitly stated. Finding programs with goals similar to yours can facilitate the use of evaluation data to another program effort.

## Description of the Program

Knowing the background of a program can assist the reader in "visualizing" the program and understanding why the program was developed and the goals for the program. Reading the description of a program in order to identify *similar* or *parallel* components to your program will help you understand which parts of the evaluation can inform your program choices.

## Description of the Population

All research, including evaluation, should report the "population" being studied. A study of children in a setting similar to yours but focusing on a different subject or discipline *may* provide you with insight for improving your program efforts. Many program evaluations have the "content" or knowledge component of the program as one small piece of the larger evaluation. There is often valuable information on what works and what doesn't that is not content based.

## How were Measurements Taken

Without being expert in tests and measures or in research or evaluation, it is still possible to apply some basic concepts of "appropriate" measurement. Look for the source of evidence and then the type of evidence and determine how appropriate the evidence might be. The sources are usually primary (the individuals being studied themselves), secondary (parents, teachers, friends, or others who have information about the subjects), and direct or indirect measures. The types of evidence relate *directly* to the goals: behavior, Knowledge/Attitude/Skill/Aspiration, input or output (activity and numbers). Knowledge tests, attitude measurements, and aspiration or intent to act measures are usually carefully constructed instruments that do not ask for self-reports such as "did you learn anything" or "how much do you think you've changed" types of questions. In reviewing an evaluation of another program, read the instruments or schedules used for data gathering and determine if you believe the instruments measured what the evaluator claimed they measure.

## Reliability and Validity

In any solid research, there are reports of both reliability and validity. Reliability is a measure of how well the instrument works in obtaining the same response over time. Validity asks if the instrument measures what it is supposed to measure, only what it is supposed to measure, and everything it is supposed to measure. Validity is usually done by a panel of experts; reliability is a statistical process.

## Findings

The most useable evaluation reports are those that provide you with both success and areas for improvement in a program. Findings should include summaries or statistical reports of *all* data gathered. These are best presented in terms of the goals of the program.

## Conclusions and Recommendations

In reading the conclusions, recommendations, and implications, the important questions to ask yourself are:
- do the ideas logically come from the data reported

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and not other sources?
- do the conclusions et al address the claims of the program set forth in its goals?
- does the discussion include ideas about deviations from expected results?
- is this more than a "pat on the back" report?

Following are some program evaluations found in the ERIC and ENC databases. These and other program evaluations are good places to start examining other programs with the purpose being to improve your own.
To read about these resources and learn where to get them, search the ERIC or ENC collections on line or at a local library or university. On line, the material can be accessed by typing

*http: //eelink.umich.edu.*

Page down to EDUCATION AND INFORMATION directory, EDUCATION directory, ASKERIC or ENC, and click on either home page. You will then be able to search ERIC and ENC databases by following the appropriate pointers.

***From ERIC***

Braus, J. A. and Wood, D. ***Environmental Education in the Schools: Creating a Program that Works!*** Manual M0044. 1993 U. S.: District of Columbia (ED 363520)
This book is a manual that enables teachers to formulate an effective program of Environmental Education across multiple grade levels and cultural settings. The focus is on planning developing, implementing and a variety of formal and informal strategies for evaluating environmental education efforts.

Collins, L. J. and Romjue, M. K. Evaluation of an Environmental Science Distance Education Program. ***Journal of Educational Media and Library Sciences***; v32 n3 p264-81. Spring 1995 (EJ 514982)
This article discusses the evaluation of wetlands, an environmental science distance education project that linked science teachers and students in 26 secondary level schools . Evaluation forms are appended to assess student understanding of environmental issues related to wetlands.

Seever, M. Trailwoods Environmental Science Magnet Elementary School: Formative Evaluation. 1991. U.S.: Missouri (ED 350159)
This report presents a formative evaluation of the first year's program of Trailwoods Environmental Science School in the Kansas City School District in Missouri. Conclusions and specific recommendations based on the data gathered are contained in this report.

***From ENC***

Wilke, R. J. (Ed.) ***Environmental Education Teacher Resource Handbook***: a practical guide for K to 12 environmental education [Print Media]. 1993 Millwood, NYKraus International Publications. (ENC-001604)
This teacher resource handbook, developed by the National science Teachers Association (NSTA), serves as a practical reference guide on environmental education for teachers and curriculum developers of K to 12. Among other aspects, the considerations and methods involved in developing a program to assess the effectiveness of an environmental education curriculum are discussed.

Keepler, M., and Mahootian, F. (Principle investigators) The Earth System Science community [Digital document, www resource) 1995 Washington, D.C.:ECOlogic Corporation (INT-004049)
This www site, developed by Earth System Science Community in cooperation with NASA's mission to Planet Earth and High Performance Computing and Communications programs, serves as the online component of a curriculum designed to study stresses of interactions among the Earth's components. The online course (http://www.circle.org/) offers information on collaborative investigations, methodology and evaluations.

*Investigating Your Environment*. U. S. Forest Service, Inter mountain region. 1994. Ogden, UT: U. S. Forest Service (ENC-002687)
The complete edition of Investigating Your Environment (IYE), designed to assist teachers in expanding their repertoire of teaching strategies and activities that focus on environmental issues. Included are descriptions of how to investigate and interpret the environment. Throughout the activities, learners collect, analyze, and interpret information. Evaluation strategies form an important component.
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